TECHNICAL NOTES

LAKE STATES FOREST EXPERIMENT STATION
U.S. DEPARTMENT OF AGRICULTURE · · FOREST SERVICE

No. 441

Deer, Mice, and Hares Damage Young Aspen and Paper Birch Plantings in Northeastern Wisconsin

In the spring of 1951, a planting of wilding quaking aspen and paper birch was made on the Argonne Experimental Forest in northeastern Wisconsin on open sodded land prepared with a heavy disk. The long-range purpose of the plots is to test the value of aspen and birch as nurse crops for protecting underplanted spruce from late spring frost. The plantings consist of 2,900 aspen and 1,650 paper birch.

The first-year survival was 87 percent for aspen and 91 percent for paper birch. Survival dropped somewhat during the second year and rather seriously the third year as noted in the table below.

Species	Survival percent			Average height in feet			Number of planted trees in sample
	First year	Second year	Third year	First year	Second year	Third year	
Aspen	87	68	42	1.1	2.2	2.5	800
Paper birch	91	83	56	1.1	1.6	1.1	600

Most of the loss was due to girdling by mice (the meadow vole, Microtus Pennsylvanicus). During the second and third years 29.6 percent of all aspen and 23.7 percent of paper birch trees were killed outright by complete mouse girdling at the ground line. Mouse populations, which usually fluctuate in a 4-year cycle, were high during 1952 and 1953.

Deer also damaged the trees by browsing the tops. Of the surviving aspen, deer browsed 17, 13, and 14 percent respectively for the 3 successive years of counts; equivalent figures for paper birch--35, 31, and 19 percent--were considerably higher. Actual total mortality due to deer was 3 percent for paper birch and less than 1 percent for aspen. The deer browsing, however, had a distinctly deleterious effect in reducing vigor and growth, especially of the birch, and in reducing ability of the trees to compete with the sod. Between the second and third years the average height of surviving aspen increased very slightly, while that of birch actually decreased due to browsing by deer.

Mortality caused by snowshoe hares was 3 percent for aspen and less than 1 percent for paper birch. Hare damage may have been low because the planting was in a completely open area, well away from the shelter of any timber or brush.

These data indicate that open-land plantings of aspen and paper birch may suffer heavily from deer and, on occasion, from mice unless given systematic protection by exclosures and by proper baiting with rodenticides. The observations may be of special interest to foresters who wish to protect selected lots of aspen and birch.

October 1955

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